

I Claim:

1. A measuring system for recording angular and linear absolute values, the measuring system comprising:

a scale having at least one track for creating the absolute values, said track having at least two identically configured segments;

a sensor configuration for measuring and recording the absolute values of each of said segments reached;

a switch configuration connected to said sensor configuration and providing a total absolute value for further processing made up of a first absolute value of said segments counted and a second absolute value of a position within a particular segment reached; and

a power supply supplying a main voltage and an auxiliary voltage;

said switch configuration having switches connected to said power supply and switching through the auxiliary voltage when the main voltage fails in an auxiliary power mode and said sensor configuration being only used in the auxiliary power mode to determine an absolute value of the particular segment reached.

2. The measuring system according to claim 1, wherein:

said track has a first track for creating the first absolute value and a second track suitable for determining the second absolute value within the segment reached; and

said sensor configuration has only one sensor for evaluating both said first track for creating the first absolute value and said second track suitable for determining the second absolute value within the segment reached.

3. The measuring system according to claim 1, wherein

said track has a first track for creating the first absolute value and a second track suitable for determining the second absolute value within the segment reached; and

said sensor configuration has at least two sensors, a first of said sensors evaluating said first track for creating the first absolute value and a second of said sensors evaluating said second track suitable for determining the absolute value within said segment reached.

4. The measuring system according to claim 1, wherein said sensor configuration has at least two sensors, a first of said

sensors acting as a redundancy for a second of said sensors in each case.

5. The measuring system according to claim 4, further comprising:

a comparator unit; and

an evaluation unit connected to said comparator unit and said sensor configuration, said sensor configuration outputting signals from said sensors and the signals or parts of the signals useful for determining the absolute values of said segments are fed into said evaluation unit, said evaluation unit outputting calculated results for said segments from each of said sensors and the calculated results are compared in said comparator circuit and, if the calculated results vary, there is a switch over to only one of said sensors in said sensor configuration.

6. The measuring device according to claim 1, further comprising an evaluation circuit, and if the auxiliary power mode is selected, the auxiliary voltage of said power supply is connected by said switch configuration to at least one of said sensor configuration and parts of said evaluation circuit required in the auxiliary power mode.

7. The measuring device according to claim 6, wherein if in the auxiliary power mode, said switch configuration having said switches interrupts connections of the main voltage with at least one of said sensor configuration and at least one part of said evaluation circuit.